Piezoelectric snap action switch

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Abstract

A piezoelectric snap action switch for connecting at least two conductive elements via first and second upwardly convex snap action plates disposed in an overlapping manner with respect to each other and respectively connected to the respective conductors. A piezoelectric polymer film with electrodes on respective surfaces thereof is disposed between the snap action plates so that upon depression of the snap action plates the piezoelectric polymer film is caused to extend or contract along a surface thereof so as to conduct an electrical signal between the electrodes on its respective surfaces. The electrical signal is then conducted between the conductors via the electrodes by electrically coupling the electrodes to the snap action plates. The resulting structure is quite rigid so that the switch is virtually insensitive to vibration, and because of the plural snap action plates, metal lead attachment is greatly facilitated.

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[54] PIEZOELECTRIC SNAP ACTION SWITCH

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[52] U.S. Cl. 310/339; 200/181

[58] Field of Search 310/339, 338; 200/181; 341/34

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[57] ABSTRACT

A piezoelectric snap action switch for connecting at least two conductive elements via first and second upwardly convex snap action plates disposed in an overlapping manner with respect to each other and respectively connected to the respective conductors. A piezoelectric polymer film with electrodes on respective surfaces thereof is disposed between the snap action plates so that upon depression of the snap action plates the piezoelectric polymer film is caused to extend or contract along a surface thereof so as to conduct an electrical signal between the electrodes on its respective surfaces. The electrical signal is then conducted between the conductors via the electrodes by electrically coupling the electrodes to the snap action plates. The resulting structure is quite rigid so that the switch is virtually insensitive to vibration, and because of the plural snap action plates, metal lead attachment is greatly facilitated.

18 Claims, 9 Drawing Sheets